Patent
Atty. Dkt. LYNN/0151

IN THE CLAIMS

Claims 1-16, 20, and 31-33 are withdrawn from consideration pursuant to 35 U.S.C. 121. Please amend claim 17-19 and 21-30 according to the following replacement claim set.

1. (Withdrawn) A method of making antimicrobial fabrics comprising the steps of:

creating a free radical species on a surface of the fabric; and

reacting a polymerizable monomer with the free radical species to initiate graft polymerization of the monomer on the fabric surface, wherein the monomer has a functional group selected from antimicrobial groups, precursors to antimicrobial groups, and combinations thereof.

2. (Withdrawn) The method of claim 1, wherein the free radical species on the fabric surface is created by means of gamma irradiation polymerization techniques.

3. (Withdrawn) The method of claim 1, wherein the free radical species on the fabric surface is created by means of UV-assisted polymerization techniques.

4. (Withdrawn) The method of claim 1, wherein the free radical species on the fabric surface is created by means of flame-initiated polymerization techniques.

5. (Withdrawn) The method of claim 1, wherein the free radical species on the fabric surface is created by means of plasma-induced polymerization techniques.

6. (Withdrawn) A method of making antimicrobial fabrics comprising the steps of:

treating a fabric with ozone to form peroxide groups on the fabric;

decomposing the peroxide groups with an iron catalyst to form oxygen radicals; and

grafting a polymerizable monomer to the oxygen radicals on the fabric surface.

7. (Withdrawn) The method of claim 6, wherein the monomer is carboxylic acid.

8. (Withdrawn) The method of claim 7, further comprising reacting the grafted monomer with a mineral acid and hydrogen peroxide to form a peracid on the fabric surface.

9. (Withdrawn) The method of claim 7, wherein the monomer is acrylic acid.

10. (Withdrawn) The method of claim 6, wherein the monomer is selected from the group consisting of quaternary ammonium salts, quaternary phosphonium salts, peracids, biguanides, iodophors, n-halamines and combinations thereof.

11. (Withdrawn) The method of claim 6, further comprising:
regenerating the peracid by exposing the fabric to mineral acid and hydrogen peroxide.

12. (Withdrawn) The method of claim 6, wherein the fabric is selected from the group consisting of cotton, linen, gauze, polyester, nylon, acrylic and blends thereof.

13. (Withdrawn) The method of claim 6, wherein the monomer has a nonpolymerizable functional group selected from carboxyl, amino, hydroxyl, sulfhydryl, amido, and mixtures thereof.

14. (Withdrawn) The method of claim 6, further comprising:
providing a polymerizable co-monomer along with the monomer to form a copolymer.

15. (Withdrawn) The method of claim 14, wherein the copolymers are selected from the group consisting of quaternary ammonium salts, quaternary phosphonium salts, peracids, biguanides, iodophors, n-halamines and combinations thereof.

16. (Withdrawn) The method of claim 14, wherein the copolymer contains a metal salt.

17. (Currently Amended) The ~~method~~ antimicrobial fabric of claim [[6]] 23, characterized in that the antimicrobial fabric has sufficient antimicrobial activity to kill microorganisms selected from the group consisting of gram- negative bacteria, gram-positive bacteria, mold, fungi and viruses.

18. (Currently Amended) The ~~method~~ antimicrobial fabric of claim [[17]] 23, wherein the gram-positive bacteria are *Staphylococcus aureus*.

19. (Currently Amended) The ~~method~~ antimicrobial fabric of claim [[17]] 23, wherein the gram-negative bacteria are selected from the group consisting of *Escherichia coli* and *Pseudomonas aeruginosa*.

20. (Withdrawn) The method of claim 6, wherein a disinfecting amount of the polymerizable monomer is grafted onto the fabric.

21. (Currently Amended) The ~~method~~ antimicrobial fabric of claim [[20]] 23, wherein ~~the disinfecting amount of the polymerizable monomer grafted onto~~ the antimicrobial fabric comprises [[is]] sufficient grafted polymerizable monomer to detoxify pesticides.

22. (Currently Amended) The ~~method~~ antimicrobial fabric of claim [[20]] 23, wherein ~~the disinfecting amount of the polymerizable monomer grafted onto~~ the antimicrobial fabric comprises [[is]] sufficient grafted polymerizable monomer to detoxify chemical and biological weapons.

23. (Currently Amended) An antimicrobial fabric produced in accordance with ~~the~~ a method ~~of claim 6~~ comprising the steps of:

treating a fabric with ozone to form peroxide groups on the fabric;

decomposing the peroxide groups with an iron catalyst to form oxygen radicals; and

grafting a polymerizable monomer to the oxygen radicals on the fabric surface.

24. (Currently Amended) The antimicrobial fabric of claim 23, wherein the antimicrobial fabric is formed into garments.

25. (Currently Amended) The ~~garments~~ antimicrobial fabric of claim 24, wherein the garments are selected from the group consisting of masks, scrubs, lab coats, and caps.

26. (Currently Amended) The antimicrobial fabric of claim 23, wherein the antimicrobial fabric is formed into items selected from the group consisting of surgical drapes, bed sheets, bedding, privacy drapes, towelettes, hygiene wipes, dressings and bandages.

27. (Currently Amended) The antimicrobial fabric of claim 23, wherein the antimicrobial fabric has disinfectant properties.

28. (Currently Amended) The ~~method~~ antimicrobial fabric of claim [[6]] 23, wherein the method is carried out without substantial disruption of interfiber adhesion of the fabric ~~is not disrupted~~.

29. (Currently Amended) The ~~method~~ antimicrobial fabric of claim [[6]] 23, wherein the method is carried out without substantial loss of fabric strength by the fabric.

30. (Currently Amended) The ~~method~~ antimicrobial fabric of claim [[6]] 23, ~~wherein the fabric retains~~ wherein the method is carried out without substantial loss of tensile strength, tear resistance and abrasion resistance by the fabric.

31. (Withdrawn) The method of claim 6, wherein the treating step is carried out at a temperature between about 40 and 80°C.

32. (Withdrawn) The method of claim 6, wherein the step of treating the fabric with ozone is carried out for between 10 minutes and 4 hours.

33. (Withdrawn) The method of claim 6, wherein the polymerizable monomer is supplied at a concentration of between 1 and 50 percent by weight.